

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of )  
William G. Lionetta, *et al.* )  
Serial No. 10/764,956 ) Before the Board of Patent  
Filed: January 26, 2004 ) Appeals and Interferences  
For: Conductive Plastic Parts for EMI Shielding )  
Examiner Hung V. Ngo ) July 02, 2007  
Group Art Unit 2831 ) Cleveland, Ohio 44124-4141

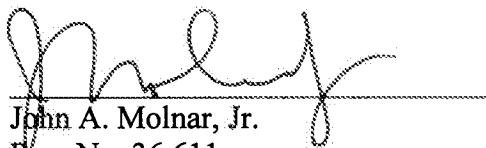
HONORABLE COMMISSIONER FOR PATENTS  
ALEXANDRIA, VA 22313-1450

**APPELLANTS' AMENDED BRIEF ON APPEAL**

Submitted herewith in accordance with 37 C.F.R. § 1.192 is Appellants' Brief on Appeal. Reversal of the Examiner's rejection of the appealed claims and the allowance thereof is respectfully requested.

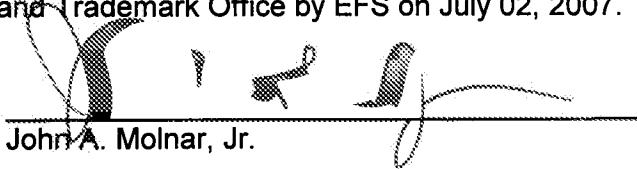
The Commissioner is authorized to charge the requisite fee or to credit any overpayment to Deposit Account No. 16-0325 (a separate deposit account authorization is enclosed).

Respectfully submitted,

  
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**CERTIFICATE OF TRANSMISSION**

I hereby certify that this correspondence is being transmitted to the United States Patent and Trademark Office by EFS on July 02, 2007.

  
John A. Molnar, Jr.

**I. REAL PARTY IN INTEREST**

Parker-Hannifin Corporation, an Ohio corporation having an address at 6035 Parkland Boulevard, Cleveland, Ohio 44124-4141, owns all right, title and interest in the above-identified application by virtue of an Assignment recorded February 20, 2004, on Reel 014358, Frame 0402.

**II. RELATED APPEALS AND INTERFERENCES**

No other appeals or interferences are known to Appellants, Appellants' legal representative, or assignee, which would directly affect or be directly affected by, or have a bearing on the Board's decision in the pending appeal.

**III. STATUS OF CLAIMS**

- i. Claims originally filed: 1-38.
- ii. Claims canceled: none.
- iii. Claims added: none.
- iv. Claims withdrawn from consideration but not canceled: none.
- v. Claims allowed: none.
- vi. Claims rejected: 1-38.
- vii. Claims objected to: none.
- viii. Claims pending: 1-38.
- ix. Claims on appeal: 1-38.

**IV. STATUS OF AMENDMENTS**

Thirty-eight (38) claims were submitted in the subject application as originally filed.

A first Office action was mailed on July 13, 2005 provisionally rejecting the claims for obviousness-type double patenting. A terminal disclaimer was filed in response on July 21, 2005.

A second Office action on the merits was mailed on November 04, 2005, rejecting claims 1-38. A response to that action was filed on May 04, 2006.

A third Office action, made final, was mailed July 14, 2006. A response was filed on December 05, 2006, to which an advisory action was issued on December 20, 2006 maintaining the final rejection of claims 1-38. This appeal followed.

The claims pending in the application therefore are 1-38, all of which are subject to the instant appeal. A clean copy of these claims is annexed hereto.

#### **V. SUMMARY OF CLAIMED SUBJECT MATTER**

There are two (2) independent claims involved in this appeal: claims 1 and 20.

Claim 1 is directed to an EMI shield having at least one compartment for enclosing circuitry of an electronic device. [See Specification, at page 3, ll. 19-22]. As claimed, such shield includes a first member formed of a thin metal sheet, and a second member formed of an electrically-conductive composite material. [page 3, ll. 22-25]. The material is an admixture of a polymeric component and an electrically-conductive particulate filler component [page 8, ll. 5-12]. The second member is integrally joined to the first member [page 11, ll. 7-9], and has at least one wall which extends from the first member and which together with the first member defines at least a portion of the compartment [page 7, ll. 4-7].

Claim 20 is directed to assembly for the EMI shielding of circuitry of an electronic device. [page 11, ll. 25-26; Fig. 5]. As claimed, the assembly includes an EMI shield as in claim 1 with the compartment thereof being received over the circuitry of the device. [page 11, l. 27, bridging page 12, l. 7].

#### **VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

Did the Examiner err in finally rejecting claims 1, 4, 9, 11-15, 20, 23, 28, and 30-34 under 35 U.S.C. § 102(e) as being anticipated by Miska (U.S. Patent No. 6,541,698)?

Did the Examiner err in finally rejecting claims 2, 3, 5-8, 10, 16-19, 21, 22, 24-27, 29, and 35-38 under 35 U.S.C. § 103(a) as being unpatentable over Miska?

#### **VII. ARGUMENT**

##### **Grouping of Claims.**

For the purpose of the present appeal only, it is Applicants-Appellants' intention that the claims be grouped as follows:

- i. Independent claims 1 and 20 are considered to be patentable independent of the other claims, but as standing or falling together;
- ii. Claims 9 and 28 are considered to be patentable independently of the other claims, but as standing or falling together; and
- iii. Claims 2-8 and 10-19 are considered to stand or fall together with independent claim 1 from which each depends; and
- iv. Claims 21-27 and 29-38 are considered to stand or fall together with independent claim 20 from which each depends.

*The Examiner erred in finally rejecting claims 1, 4, 9, 11-15, 20, 23, 28, and 30-34 under 35 U.S.C. § 102(e) as being anticipated by Miska (U.S. Patent No. 6,541,698)?*

Miska has been cited as disclosing an EMI shield having first member (16, 18) made of a thin metal sheet, and a second member (15) made of a polymer component and an electrically conductive particulate filler component.

Claims 1 and 20

As to independent claim 1, directed to a shield, and independent claim 20, directed to an assembly including such shield, both of these claims as filed recite that the second member is “integrally joined” to the first member. For example, and as is described at page 11, lines 6-24 of the specification, the second member may be molded or bonded to the first section.

Turning then to the Miska, the gasket (10), as to which the Examiner considers the film (15) of the sheath (14) thereof to be equivalent to the claimed second member, does not appear to be integrally joined to the surfaces (16, 18). Rather, “the gasket is disposed for use between [the] adjacent metal surfaces **16, 18 ...**.” [Miska, at col. 5, ll. 66-67]. Indeed, Miska mentions that, “over time, there is relative movement between the metal surfaces **16, 18** and the gasket **10 ...**.” [*Id.*, at col. 5, ll. 41-42].

As Miska does not appear to disclose the claimed feature that the second member is “integrally joined” to the first member, claims 1 and 20 are submitted to be novel over the art made of record. *See In re Bond*, 15 U.S.P.Q.2d 1566, 1567 (Fed. Cir. 1990), *citing Diversitech Corp. v. Century Steps, Inc.*, 7 U.S.P.Q.2d 1315, 1317 (Fed. Cir. 1988) (for a prior art reference to anticipate in terms of 35 U.S.C. § 102, every element of the claimed invention must be identically shown in the single reference); *See also In re Spada*, 15 U.S.P.Q.2d 1655, 1657 (Fed. Cir. 1990) (rejection for anticipation requires that all the elements of the claimed invention be

described in a single reference, and that the reference describe the claimed invention sufficiently to have placed one of ordinary skill in the art in possession of it); and *In re Fine*, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988) (finding the Board to have erred in ignoring a claimed limitation of which the prior art did not disclose).

The Office has responded that the term “integral” is sufficiently broad to embrace constructions united by means such as welding and fastening. While that may be, Miska discloses no such means for uniting the film (15) to the surfaces (16) or (18). Accordingly, as Miska does not appear to disclose in anyway the claimed feature that the second member is “integrally joined” to the first member, claims 1 and 20 are submitted to be novel over the art made of record.

Claims 9 and 28

Dependent claims, claims 9 and 28 specify that the second member is “self-bonded” to the first member, such as via the insert molding process mentioned at page 11, lines 11-24 of the specification. It is believed that this feature is neither shown nor suggested in the art currently made of record.

The Office has responded by referencing Figs. 1 and 3 of Miska. However, and as mentioned, the gasket (10) does not appear to be integrally joined to the surfaces (16, 18). Rather, “the gasket is disposed for use between [the] adjacent metal surfaces 16, 18 . . .” [Miska, at col. 5, ll. 66-67]. Indeed, Miska mentions that, “over time, there is relative movement between the metal surfaces 16, 18 and the gasket 10 . . .” [Id., at col. 5, ll. 41-42]. As to Fig. 1, that figure appears to simply show the gasket (10) as so disposed between the surfaces (16) and (18). Fig. 3 does not even show the surfaces (16,18), so it is unclear how that figure would support the examiner’s position.

Claims 4, 11-15, 23, and 30-34

Dependent claims 4, 11-15, 23, and 30-34 further describe either independent claim 1 or 20, and therefore should be considered allowable for the reasons given in connection with the independent claims.

*The Examiner erred in finally rejecting claims 2, 3, 5-8, 10, 16-19, 21, 22, 24-27, 29, and 35-39 under 35 U.S.C. § 103(a) as being unpatentable over Miska?*

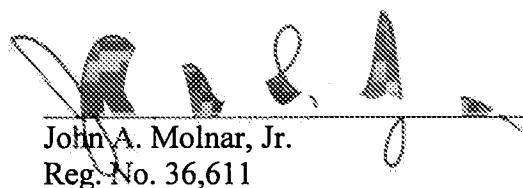
The remaining dependent claims 2, 3, 5-8, 10, 16-19, 21, 22, 24-27, 29, and 35-38 further describe either independent claim 1 or 20, and therefore should be considered allowable for the reasons given in connection with the independent claims.

Conclusion

As the present claim program has been shown to properly distinguish over the art made of record, Applicants-Appellants respectfully urge the Board to overrule the rejection of the appealed claims and to permit the application to pass to issue.

Respectfully submitted,

Dated: July 02, 2007



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**VIII. CLAIMS APPENDIX**

1. An EMI shield having at least one compartment for enclosing circuitry of an electronic device, said shield comprising:

a first member formed of a thin metal sheet; and

5 a second member formed of an electrically-conductive composite material comprising an admixture of a polymeric component and an electrically-conductive particulate filler component, the second member being integrally joined to the first member, and having at least one wall which extends from the first member and which together with the first member defines at least a portion of said compartment.

2. The shield of claim 1 wherein the polymeric component comprises one or more thermosetting or thermoplastic polymers or co-polymers, or a blend thereof.

3. The shield of claim 1 wherein the polymeric component is selected from the group consisting of epoxies, phenolics, poly(ether ether ketones), polyimides, polyolefins, polyetherimides, polybutylene terephthalates, polyethylene terephthalates, nylons, polyamides, fluoropolymers, polysulfones, polyesters, acetal homo and copolymers, liquid 5 crystal polymers, polyacrylics, polymethylacrylates, poly(ester and ether urethanes), polyurethanes, acrylonitrile-butadiene-styrene, polyvinyl chlorides, polyphenylene ethers, polyphenylene oxides, polystyrenes, polycarbonates, and copolymers and blends thereof.

4. The shield of claim 1 wherein the shield exhibits an EMI shielding effectiveness of at least about 60 dB substantially over a frequency range of between about 10 MHz and about 10 GHz.

5. The shield of claim 1 wherein the composite material has a volume resistivity of not greater than about 1,000 Ω-cm.

6. The shield of claim 1 wherein the composite material comprises between about 5-95% by weight of the filler component.

7. The shield of claim 1 wherein the metal sheet has a thickness of not greater than about 10 mils (0.125 mm).
8. The shield of claim 1 wherein the wall of the second member has a thickness of between about 3-10 mil (0.075-0.254 mm).
9. The shield of claim 1 wherein the second member is self-bonded to the first member.
10. The shield of claim 1 wherein the sheet is formed of aluminum, zinc, magnesium, steel, or a combination or alloy thereof.
11. The shield of claim 1 wherein the wall extends from the first member to an end surface, the end surface being disposable on a part of the device.
12. The shield of claim 11 further comprising an electrically-conductive layer or gasket disposed on the end surface.
13. The shield of claim 12 wherein the electrically-conductive layer comprises a metal or a resin filled with electrically-conductive particulates.
14. The shield of claim 12 wherein the gasket comprises an elastomeric resin filled with electrically-conductive particulates.
15. The shield of claim 12 wherein the gasket or layer is self-adherent on the end surface.
16. The shield of claim 1 wherein the electrically-conductive particulate filler component comprises electrically-conductive fibers.
17. The shield of claim 16 wherein the electrically-conductive fibers are selected from the group consisting of: graphite, carbon, inherently-conductive polymer, and metal

fibers; metal or non-metal fibers having an electrically-conductive coating; and mixtures and combinations thereof.

18. The shield of claim 17 wherein the electrically-conductive coating comprises one or more layers of carbon, graphite, or one or more inherently-conductive polymers or metals, or a combination thereof.

19. The shield of claim 16 wherein the fibers have an average length of between about 0.004-1 inch (0.1-25 mm).

20. An assembly for the EMI shielding of circuitry of an electronic device, the assembly comprising:

an EMI shield having at least one compartment, the shield comprising:

a first member formed of a thin metal sheet; and

5 a second member formed of an electrically-conductive composite material comprising an admixture of a polymeric component and an electrically-conductive particulate filler component, the second member being integrally joined to the first member, and having at least one wall which extends from the first member and which together with the first member defines at least a portion of said compartment,  
10 the compartment being received over the circuitry of the device.

21. The assembly of claim 20 wherein the polymeric component comprises one or more thermosetting or thermoplastic polymers or co-polymers, or a blend thereof.

22. The assembly of claim 20 wherein the polymeric component is selected from the group consisting of epoxies, phenolics, poly(ether ether ketones), polyimides, polyolefins, polyetherimides, polybutylene terephthalates, polyethylene terephthalates, nylons, polyamides, fluoropolymers, polysulfones, polyesters, acetal homo and copolymers,  
5 liquid crystal polymers, polyacrylics, polymethylacrylates, poly(ester and ether urethanes), polyurethanes, acrylonitrile-butadiene-styrene, polyvinyl chlorides, polyphenylene ethers, polyphenylene oxides, polystyrenes, polycarbonates, and copolymers and blends thereof.

23. The assembly of claim 20 wherein the shield exhibits an EMI shielding effectiveness of at least about 60 dB substantially over a frequency range of between about 10 MHz and about 10 GHz.

24. The assembly of claim 20 wherein the composite material has a volume resistivity of not greater than about 1,000  $\Omega\text{-cm}$ .

25. The assembly of claim 20 wherein the composite material comprises between about 5-95% by weight of the filler component.

26. The assembly of claim 20 wherein the metal sheet has a thickness of not greater than about 10 mils (0.125 mm).

27. The assembly of claim 20 wherein the wall of the second member has a thickness of between about 3-10 inch (0.075-0.254 mm).

28. The assembly of claim 20 wherein the second member is self-bonded to the first member.

29. The assembly of claim 20 wherein the sheet is formed of aluminum, zinc, magnesium, steel, or a combination or alloy thereof.

30. The assembly of claim 20 wherein the wall extends from the first member to an end surface, the end surface being disposed on a part of the device which together with the compartment encloses the circuitry.

31. The assembly of claim 30 further comprising an electrically-conductive layer or gasket interposed between the end surface and the device part.

32. The assembly of claim 31 wherein the electrically-conductive layer comprises a metal or a resin filled with electrically-conductive particulates.

33. The assembly of claim 31 wherein the gasket comprises an elastomeric resin filed with electrically-conductive particulates.

34. The assembly of claim 31 wherein the gasket or layer is self-adherent on the end surface.

35. The assembly of claim 20 wherein the electrically-conductive particulate filler component comprises electrically-conductive fibers.

36. The assembly of claim 35 wherein the electrically-conductive fibers are selected from the group consisting of: graphite, carbon, inherently-conductive polymer, and metal fibers; metal or non-metal fibers having an electrically-conductive coating; and mixtures and combinations thereof.

37. The assembly of claim 36 wherein the electrically-conductive coating comprises one or more layers of carbon, graphite, or one or more inherently-conductive polymers or metals, or a combination thereof.

38. The assembly of claim 35 wherein the fibers have an average length of between about 0.004-1 inch (0.1-25 mm).

**IX. EVIDENCE APPENDIX**

**1. Miska, U.S. Patent No. 6,541,698.**

Entered into the record in the non-final Office Action mailed November 04, 2005.

**X. RELATED PROCEEDINGS APPENDIX**

None